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Case Report

Endoscopic Treatment of a Broncho-Esophageal Fistula after Sclerotherapy Injection for Acute Variceal Bleeding

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Abstract

Introduction: Broncho-esophageal fistula (BEF) is a rare complication of sclerotherapy for esophageal variceal bleeding with high morbidity and mortality.

Case Report: A 57-year-old male with decompensated cirrhosis complaining of dysphagia and fever was diagnosed with BEF soon after cyanoacrylate injection for acute variceal bleeding. The patient was successfully treated with a self-expandable metal stent (SEMS) anchored in the upper esophagus with a stent fixation clip.

Conclusion: Endoscopic management of BEF with SEMS is safe and effective and stent fixation clips can improve the success rate of the endoscopic treatment.

Keywords: Broncho Esophageal Fistula; Sclerotherapy of Varices; Self-Expandable Metal Stent; Stentfix

Introduction

Broncho-esophageal fistula (BEF) is a rare complication of sclerotherapy for esophageal variceal bleeding [1,2], and it is only anecdotally reported in literature [3-5]. Symptoms of BEF include cough, fever and pneumonia. Given its morbidity, it should be diagnosed and treated as soon as possible [6]. The choice of treatment could be surgical or endoscopic as well. We report the case of a patient with BEF after variceal sclerotherapy treated with the endoscopic placement of an enteral self-expandable metal stent (SEMS).

Case Report

A 57-year-old male with alcohol-related cirrhosis was admitted to our Hospital with fever (39.5°C), retrosternal pain with the onset of dysphagia for solid food and hepatic encephalopathy (HE). The liver disease was complicated by severe portal hypertension with splenomegaly, refractory ascites and history of variceal esophageal bleeding treated with four sessions of endoscopic band ligation and Cyanoacrylate injection (2 cc). A barium esophagogram documented the presence of a leak of contrast medium in the distal posterior wall of the esophagus (Figure 1a) also confirmed with CT scan. An upper GI endoscopy was then performed showing the presence of two residual F2 varices in the distal esophagus with a small fibrinous circular

and depressed area of 5 mm surrounding a deep submucosal tunnel. Under fluoroscopy, the contrast medium (CM) injection revealed a leak oriented towards the left lung (Figure 1b). The patient underwent an urgent bronchoscopy in the same session, which confirmed the presence of bloody fluids and air leakage coming from the inferior left bronchus suitable for BEF. The residual esophageal varices and the scars of previous banding ligation treatment lead us to a closure of the fistula with the use of esophageal stent, so we proceed to deploy a fully covered self expandable metal stent (SEMS) (diameter 20 mm x 10 cm length - Taewoong). In order to avoid stent migration, the proximal end of the SEMS was fixed using an over the scope clip (Stentfix OTSC®) in the upper esophagus (Figure 2b). The correct stent positioning with no more contrast leakage was confirmed under fluoroscopy (Figure 2a). After the procedure, the patients quickly restarted oral intake, and any further symptoms were seen. Six weeks later, the patient was scheduled for an endoscopic evaluation: after stent removal, a residual fistulous orifice of 3-5 mm in the distal esophagus (Figure 3a) was highlighted. CM injection showed just a small blindly fistulous tract without any leak towards the lungs (Figure 3b), confirming the successful BEF closure.

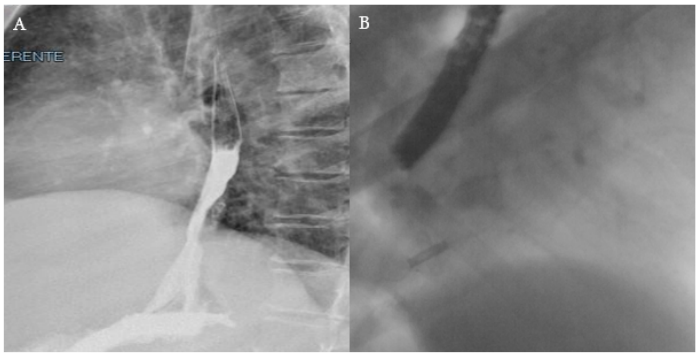

Figure 1: (A) Barium esophagogram showing a leak on the distal tract of the esophagus; (B) fluoroscopy showing a leak towards the lungs in the distal part of the esophagus.

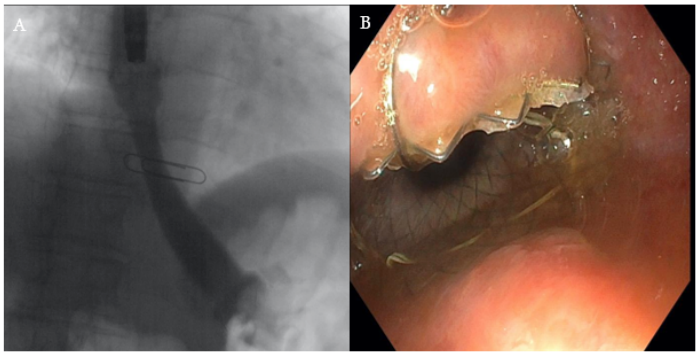

Figure 2: (A) Fluoroscopy showing the correct placement of the SEMSs with no leak of CM; (B) Fully covered metal stent fixed on the proximal end with Stentfix OTSC® System.

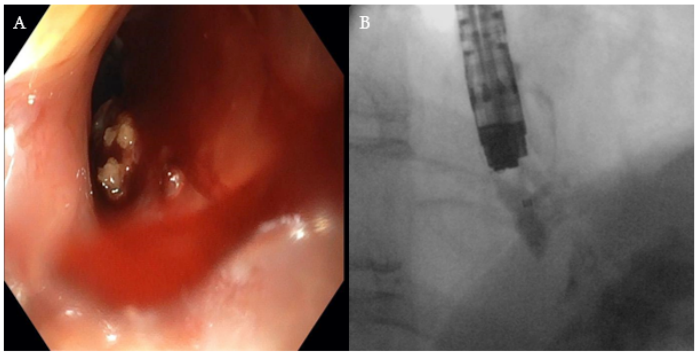

Figure 3: (A) Residual submucosal tunnel of approximately 5 mm; (B) fluoroscopy showing a blindly fistulous tract.

Discussion

The treatment of choice in acute variceal bleeding is endoscopic band ligation, due to its efficacy and low rate of adverse events [7], however as "rescue therapy" in refractory variceal bleeding Cyanoacrylate is still used but high complications rate have been described BEF is a rare but serious and life threatening complication of esophageal sclerotherapy, burdened by high morbidity and mortality, requiring effective management as soon as possible. Due to hypokinetic cardiomyopathy, after collegial evaluation, the patient was ruled out for liver transplantation, TIPS placement or surgical treatment to fix the BEF. Therefore, the endoscopic approach was the last rescue therapy applicable. The use of esophageal SEMSs is recommended for treating benign leaks and fistulas, but the guidelines suggest that the stent choice (covered vs partially covered) should be individualized on the patient characteristics [6]. In a similar case reported by Sui et. al, an esophago-pleural fistula developed after sclerotherapy of varices, was treated with a covered SEMS removed after two months [8]. In our patient the presence of residual esophageal varices and the scars of previous banding ligation treatment lead us to prefer a fully covered stent, for preventing further bleeding as well as to ensure an easier removal. Stent migration is the most common adverse event, especially in benign diseases. The Stentfix OTSC® System is the innovative solution for stent fixation in the digestive tract and it is labeled specifically for the fixation of SEMS, preventing an early migration [9]. Indeed, after six weeks, the BEF was closed and the patient was discharged with no further complications.

Conclusion

BEF can be safely and effectively treated by endoscopic SEMS positioning. The use of an over the scope clip to fix the stent (the Stentfix OTSC® System) could prevent its early migration in benign condition.

Acknowledgement and Authors Contribution

All co-authors agreed on the therapeutic approach of the case and revised the article critically and approved the final version to be submitted. CS and BH performed the procedure. CS and MG wrote the manuscript. The authors have no conflict of interest to declare. No fundings to declare.

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